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## **Chapter 7**

# **Secondary Containment Requirements**

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## 7.1 Introduction

### 7.1.1 Background

EPA has determined that secondary containment with **interstitial** monitoring (monitoring of the space between the inner tank and the outer shell for the presence of HW that has leaked or spilled) is the only proven technique for guarding against releases to the environment. Secondary containment allows for the detection of releases from the inner tank while providing a barrier that contains releases before they can escape into the environment. Therefore, EPA requires that all HW tank systems must have secondary containment with interstitial monitoring installed or retrofitted within a specific period of time unless they have been exempted.

Exempted tank systems are those that:

- Are used to store or treat HW that contains no free liquid **and** are situated inside a building with an impermeable floor; or
- Serve as part of a secondary containment system (including sumps). [40 CFR 264/265.190(a), (b)]

Note: To demonstrate the absence of free liquids in the stored/treated waste, EPA Method 9095 [Paint Filter Liquids Test] as described in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods" [EPA Publication No. SW-846F] must be used. [10]

New HW tanks must be provided with secondary containment before operation of the tank is begun. For existing tank systems, secondary containment with interstitial monitoring can be phased in.

An existing tank that is determined to be non-leaking on the basis of tank integrity assessments or other means must be provided with secondary containment by the time it is 15 years old, at the latest. Periodic tank system integrity assessments are required for all tanks not fitted with secondary containment.

If a leak is discovered (through the tank integrity assessment or otherwise) in any component of the existing tank system (i.e., tank vessel or ancillary equipment) that is located underground, that tank system component must be provided with secondary containment before the tank system is returned to service. Additionally, if a leak has occurred in any portion of a tank system component that is not readily accessible for visual inspection (e.g., the bottom of an on-ground tank), the component must be provided with secondary containment prior to returning the tank system to service. See Chapter 8, "Release Response Requirements," for these requirements.

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If the owner or operator desires, he/she may obtain a variance from the secondary containment requirements. Variance requirements are addressed in "Module B: Secondary Containment: Variance Requirements." If a HW tank that has received a variance leaks, the owner or operator must follow specific leak response requirements. Those requirements are discussed in "Module C: Responding to Releases From HW Tanks that have Received a Variance."

### **7.1.2 Major Requirements**

- **Module A: Secondary Containment Requirements.**

This module describes the minimum requirements that secondary containment systems must meet to comply with the regulations.

- **Module B: Secondary Containment: Variance Requirements.**

This module describes the requirements that must be met by an owner or operator who wishes to obtain a variance from the secondary containment requirements.

- **Module C: Responding to Releases From HW Tanks that have Received a Variance.**

This module describes the release response requirements that must be met by owners or operators of HW tank systems that have received a variance from the secondary containment requirements.

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## 7.2 Module A: Secondary Containment Requirements

### 7.2.1 Introduction

The types of secondary containment systems that are acceptable under 40 CFR 264/265.193 are liners (external to the tank), vaults, double-walled tanks, concrete bases with diking, and equivalent systems as approved by a Regional Administrator of the EPA. Secondary containment systems are designed to temporarily contain any released waste.

Secondary containment systems can be constructed using a variety of materials. Liners are typically constructed of low-permeability natural material (such as clay) or a synthetic membrane (such as polyvinyl chloride). Vaults are generally constructed of concrete and lined with a nonporous coating, and usually are engineered to allow inspection of the enclosed tank for leaks.

Before the form of secondary containment is chosen, the chemical and physical characteristics of the HW must be known. The HW must be compatible with the material chosen for the construction of the secondary containment structure, otherwise leakage through the secondary containment may result.

### 7.2.2 Milestones

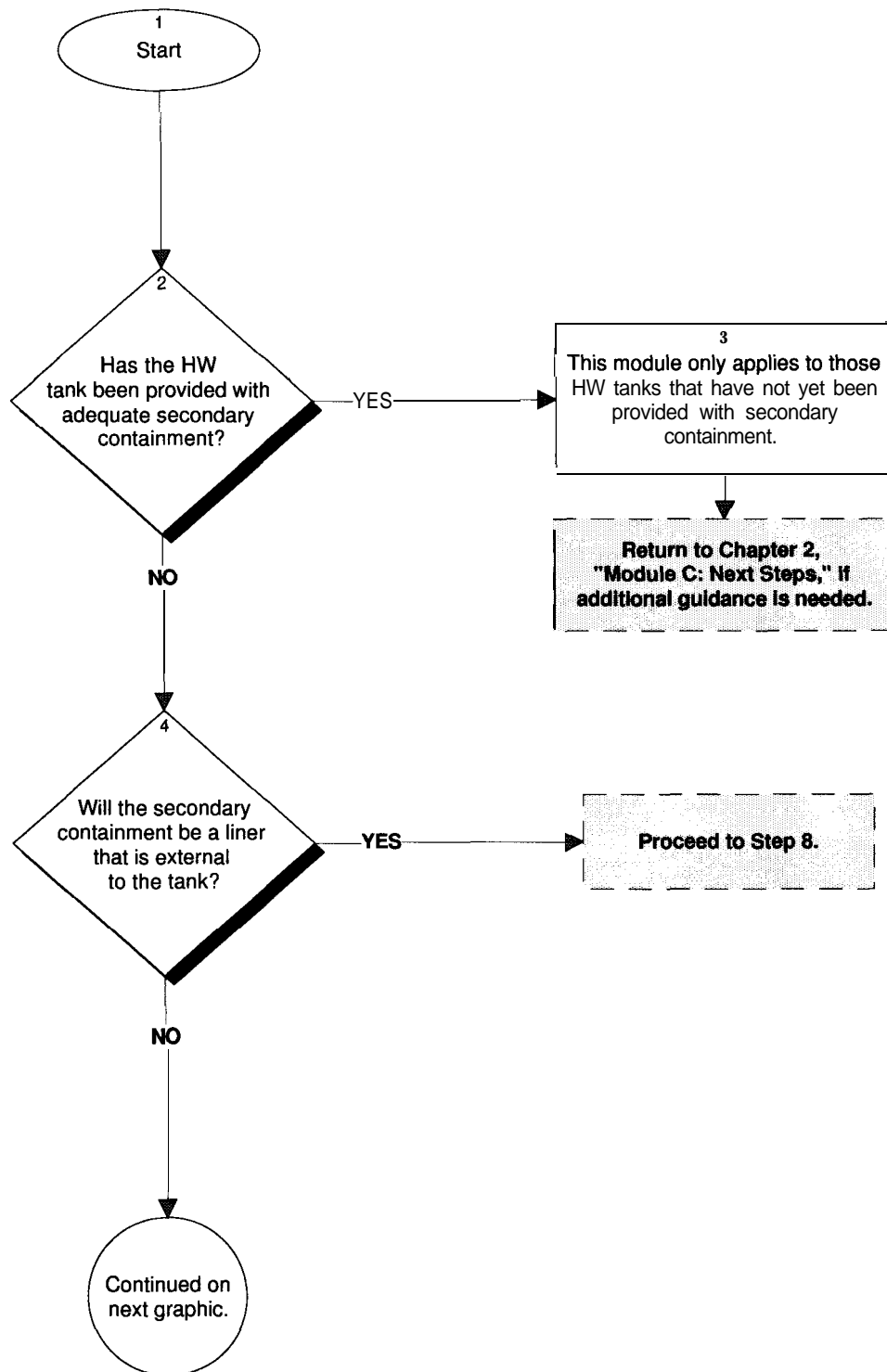
***Does the HW tank have adequate secondary containment?***

The secondary containment chosen for the HW tank must be:

- One listed in 40 CFR 264/265.193; or
- An equivalent device approved by a Regional Administrator of the EPA.

The following module provides the design and installation requirements for secondary containment systems.

**Figure 7.1: Secondary Containment Requirements**



**Step 1** Start

**Step 2** Secondary containment systems must be:

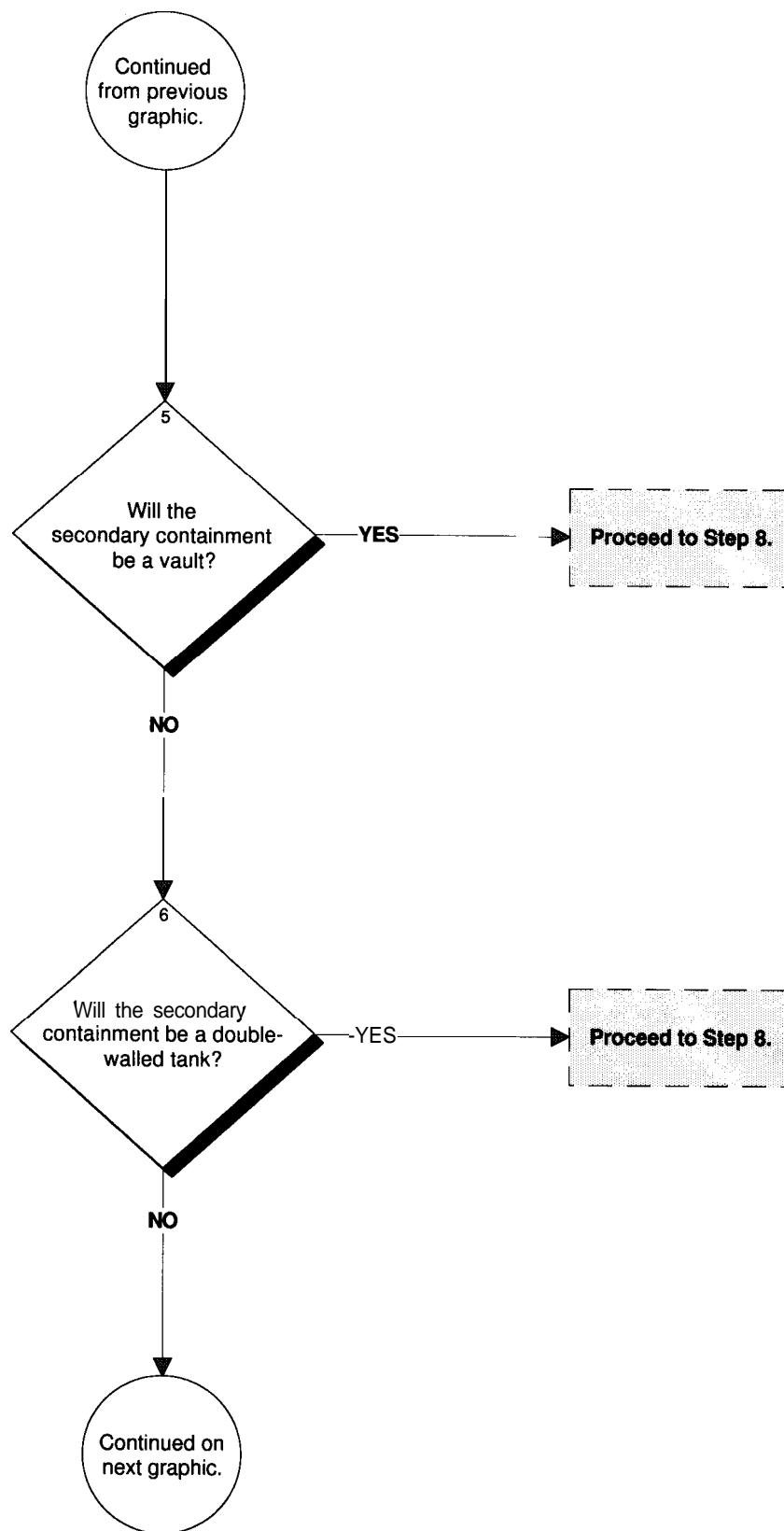
- Designed, installed, and operated to prevent any migration of HWs or accumulated liquid out of the system to the soil, groundwater, or surface water at any time during the use of the tank system; and
- Capable of detecting and collecting releases and accumulated liquids until the collected material is removed.

Note: If the material collected in a secondary containment structure is a HW under 40 CFR Part 261 [Identification and Listing of HW], it is subject to all applicable requirements of 40 CFR Parts 261, 262, 263 through 265. If discharged through a point source to waters of the U.S., it is subject to Sections 301, 304, and 402 of the Clean Water Act, or Section 302 if it is a Publicly Owned Treatment Works [POTW]. If the HW is released to the environment, 40 CFR Part 302 may require the owner or operator to report the incident to the National Response Center [NRC].

**Step 3** If the HW tank has already been provided with secondary containment that complies with the requirements listed above in Step 2, this chapter does not apply. If, however, the secondary containment is found to be **inadequate** or is being constructed as part of a **new** tank system, this chapter **is** applicable.

**Step 4** External liner systems must be:

- Free of gaps and cracks, and designed to contain 100 percent of the capacity of the largest tank within its boundary;
- Designed or operated to prevent run-on or infiltration of precipitation into the secondary containment system unless the collection system has sufficient excess capacity to contain run-on or infiltration from a 25-year, 24-hour rainfall event; and
- Designed and installed to surround the tank completely and to cover all surrounding earth likely to contact the HW as a result of a release (i.e., it must be capable of preventing lateral as well as vertical migration of the HW).





**Step 5** Vault systems must be:

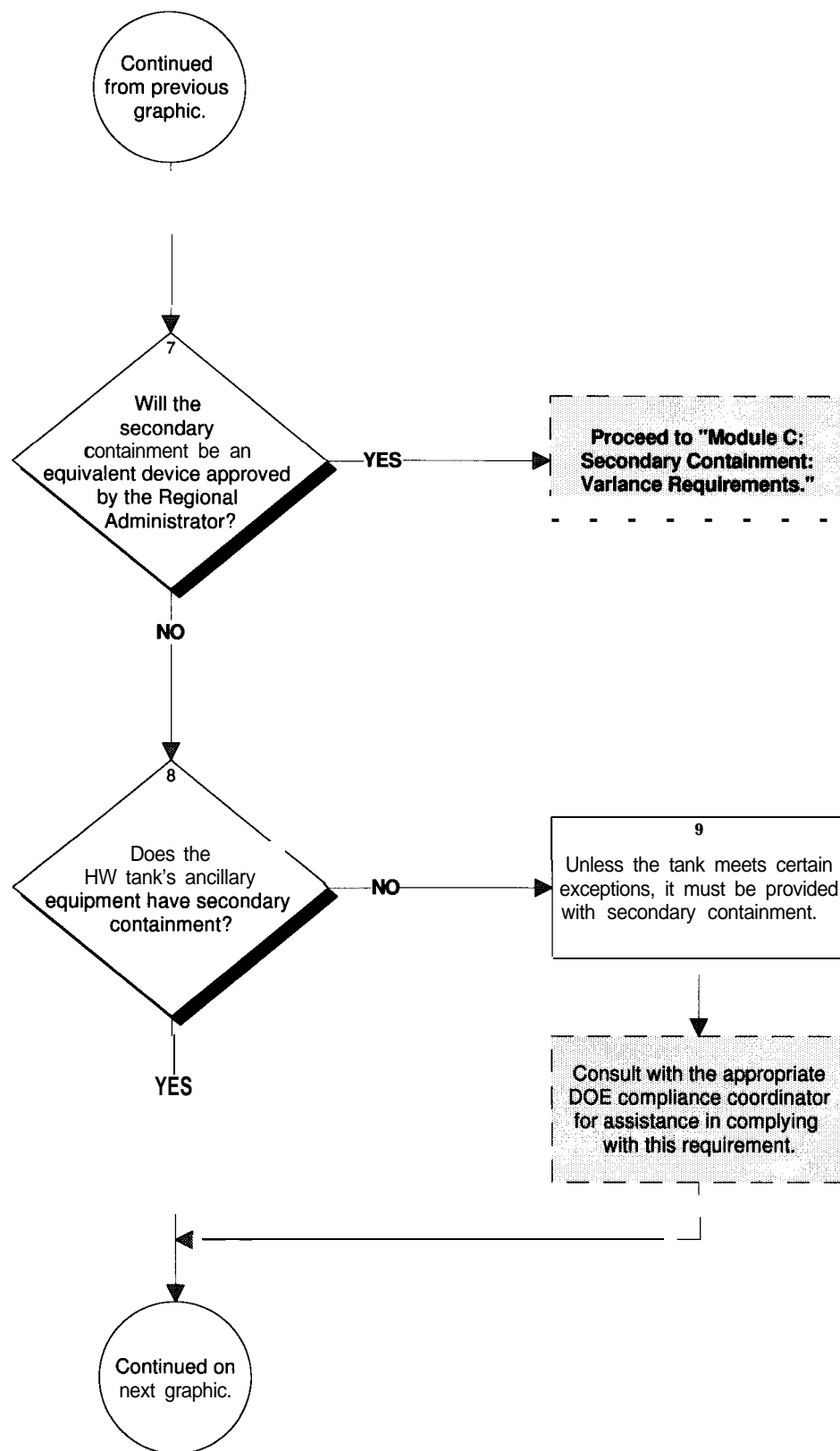
- Designed or operated to contain 100 percent of the capacity of the largest tank within its boundary;
- Designed or operated to prevent run-on or infiltration of precipitation into the secondary containment system unless the collection system has sufficient excess capacity to contain run-on or infiltration from a 25-year, 24-hour rainfall event;
- Provided with chemical-resistant water stops at all joints;
- Provided with an impermeable interior coating or lining that is compatible with the stored HW and that will prevent migration of HW into the concrete;
- Provided with a means to protect against the formation and ignition of vapors within the vault, if the HW being stored or treated meets the definition of ignitable or reactive waste and may form an ignitable or explosive vapor (see Chapter 1, Section 1.2, for the definitions of ignitable or reactive waste.); and
- Provided with an exterior moisture barrier or be otherwise designed or operated to prevent migration of moisture into the vault if the vault is subject to hydraulic pressure.

HW and accumulated liquids must be prevented from reaching the soil, groundwater, or surface water at any time during the use of the tank system.

**Step 6** Double-walled tanks must be:

- Designed as an integral structure (i.e., an inner tank completely enveloped within an outer shell) so that any release from the inner tank is contained by the outer shell;
- Protected (if constructed of metal) from both corrosion of the primary tank interior and of the external surface of the outer shell; and
- Provided with a built-in, continuous, leak detection system capable of detecting a release within 24 hours (or at the earliest practicable time, if the owner or operator demonstrates and if the Regional Administrator concludes that the existing detection technology or site conditions would not allow detection of a release within 24 hours).

**Note:** The Steel Tank Institute's [STI] "Standard for Dual Wall Underground Steel Storage Tanks" may be used to supply guidelines for aspects of the design of underground, steel, double-walled tanks. [11]

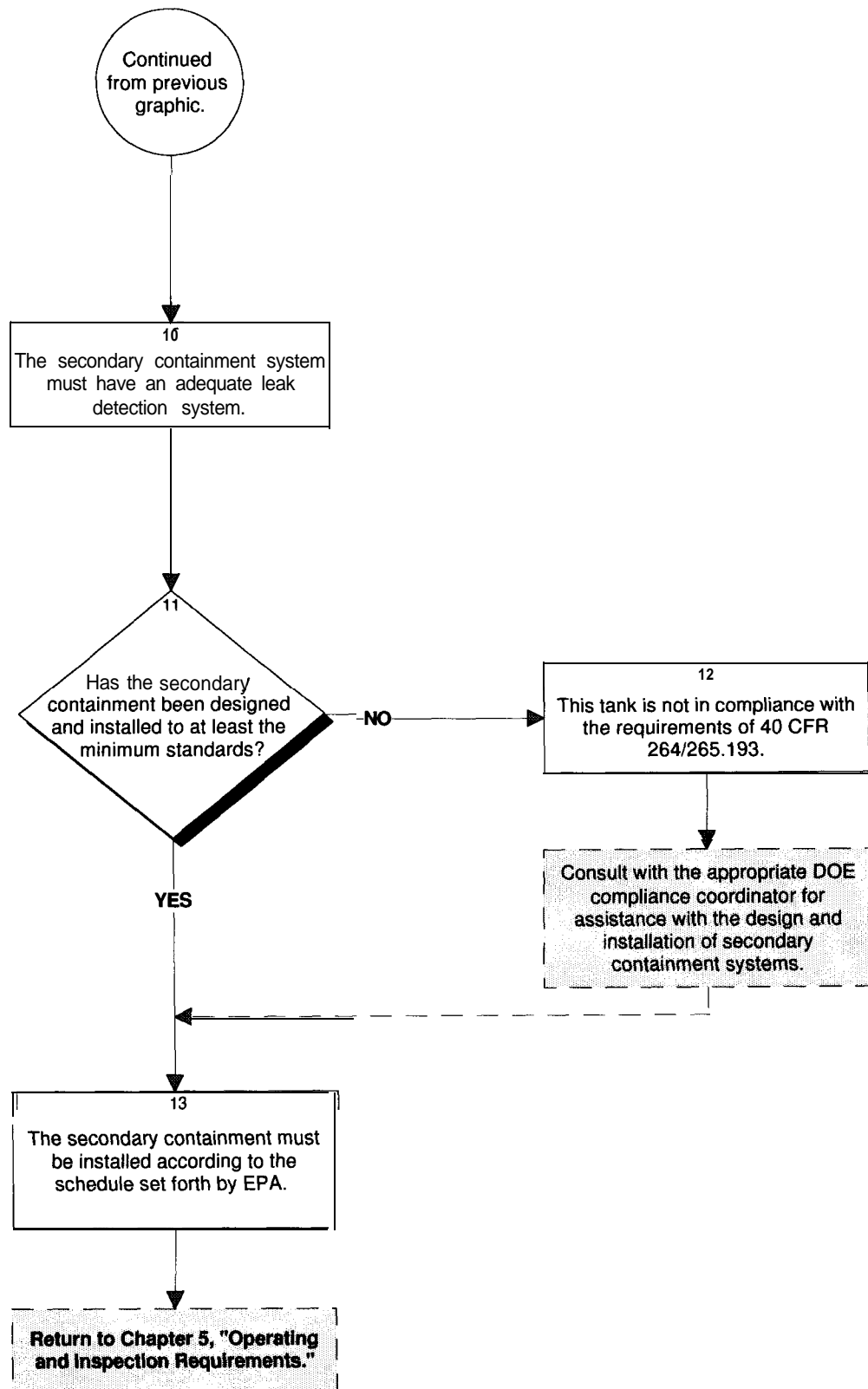


- Step 7** The Regional Administrator of the EPA must find, as the result of a demonstration, that alternative design and operating practices, together with location characteristics, will prevent the migration of any HW or hazardous constituents into groundwater or surface water, or, if a release does migrate to groundwater or surface water, that no substantial present or potential hazards will be created. See "Module B: Secondary Containment: Variance Requirements," for further details.
- Step 8** Ancillary equipment must be provided with secondary containment (e.g., trench, jacketing, double-walled piping) that meets the requirements of Steps 2, 10, and 11 of this module.
- Step 9** In addition to the inspection requirements described here, see Chapter 6, "Module B: Inspection Requirements," for further information pertaining to the inspection of ancillary equipment.

The ancillary equipment listed below does not require secondary containment if it is visually inspected for leaks on a **daily** basis:

- Aboveground piping (exclusive of flanges, joints, valves, and other connections);
- Welded flanges, welded joints, and welded connections;
- Seal-less or magnetic coupling pumps and seal-less valves; and
- Pressurized aboveground piping systems with automatic shut-off devices (e.g., excess flow check valves, flow metering shutdown devices, loss-of-pressure actuated shut-off devices).

Figure 7.1: Secondary Containment Requirements - continued



- Step 10** The leak-detection system must be able to detect the failure of either the primary or secondary containment structure, or the presence of any release of HW or accumulated liquid in the secondary containment system, within 24 hours (or at the earliest time if the owner or operator can demonstrate to the Regional Administrator that existing detection technologies or site conditions will not allow detection of a release within 24 hours).
- Step 11** Secondary containment systems must be at a minimum:
- Constructed of, or lined with, materials that are compatible with the HW to be placed in the tank system and of sufficient strength and thickness to prevent failure owing to pressure gradients (including static head and external hydrological forces), physical contact with the waste to which it is exposed, climatic conditions, or the stress of daily operation (including stresses from nearby vehicular traffic);
  - Placed on a foundation or base that can support the secondary containment system; provide resistance due to pressure gradients above and below the system, prevent failure from settlement, compression, or uplift; and
  - Sloped or otherwise designed or operated to drain and remove liquids resulting from leaks, spills, or precipitation (removal of such material from the secondary containment system must be accomplished within 24 hours [or as soon as possible to prevent harm to human health and the environment if the owner or operator can demonstrate to the Regional Administrator of the EPA that removal of the released HW or accumulated precipitation cannot be accomplished within 24 hours]).
- Step 12** A secondary containment system not designed to these standards may not be capable of containing spilled or leaked HW.
- Step 13** Installation schedules vary as follows for new and existing tanks:
- **New tank systems** must be provided with secondary containment prior to being placed into service;
  - All **existing tank systems** used to store or treat EPA HW Nos. F020, F021, F022, F023, F026, and F027 must have received secondary containment by January 12, 1989;
  - For existing tank systems of known and documented age, secondary containment must have been provided by January 12, 1989, or when the tank system has reached 15 years of age, if that date is later;
  - For existing tank systems for which the age cannot be documented, secondary containment must be provided by January 12, 1995, but if the age of the **facility** is greater than 7 years, secondary containment must be provided by the time the facility reaches 15 years of age, or by January 12, 1989, whichever comes later; and
  - For tank systems that store or treat materials that become HWs subsequent to January 17, 1987, secondary containment must be provided by the time intervals specified above, except that the date that a material becomes a HW must be used in place of January 17, 1987.

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## 7.3 Module B: Secondary Containment: Variance Requirements

### 7.3.1 Introduction

As discussed in Section 7.2, "Module A: Secondary Containment Requirements," EPA designates three types of secondary containment acceptable for use with HW tanks. However, if owners or operators wish to employ a different design, they may do so upon approval of a Regional Administrator of the EPA. There are two types of variances that an owner or operator can obtain: one is based on technology, the other is based on risk.

#### Technology-Based Variance

The owner or operator may demonstrate to the Regional Administrator that a particular alternative design and operating practice, together with location characteristics, will prevent migration of any HW or hazardous constituents into groundwater and/or surface water throughout the active life of the HW tank system as effectively as secondary containment with leak detection. This is the "technology-based variance." This variance provision recognizes that the combination of certain site-specific and waste-specific characteristics may physically prevent the movement of hazardous constituents into groundwater and surface water.

#### Risk-Based Variance

Instead of the technology-based variance, the owner or operator may choose to obtain a "risk-based variance." This variance is based on a demonstration that the HW released from a tank system will pose no substantial present or potential harm to human health or the environment. New underground tank systems are **precluded** from obtaining a risk-based variance because of a provision in HSWA Section 3004(o)(4)(A) that requires all new underground tanks to use a leak detection system. EPA has concluded that secondary containment is the only generally applicable mechanism that will allow detection and response to releases from HW tank systems.

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### 7.3.2 Milestones

***Does the owner or operator wish to obtain a variance from the secondary containment requirements?***

To obtain a variance, the owner or operator must be able to demonstrate to a Regional Administrator of the EPA that the alternative design will:

- Prevent the migration of any HW into the groundwater and/or surface water at least as effectively as secondary containment; or
- Assure that a release of HW to groundwater and/or surface water would not pose a substantial present or potential hazard to human health or the environment.

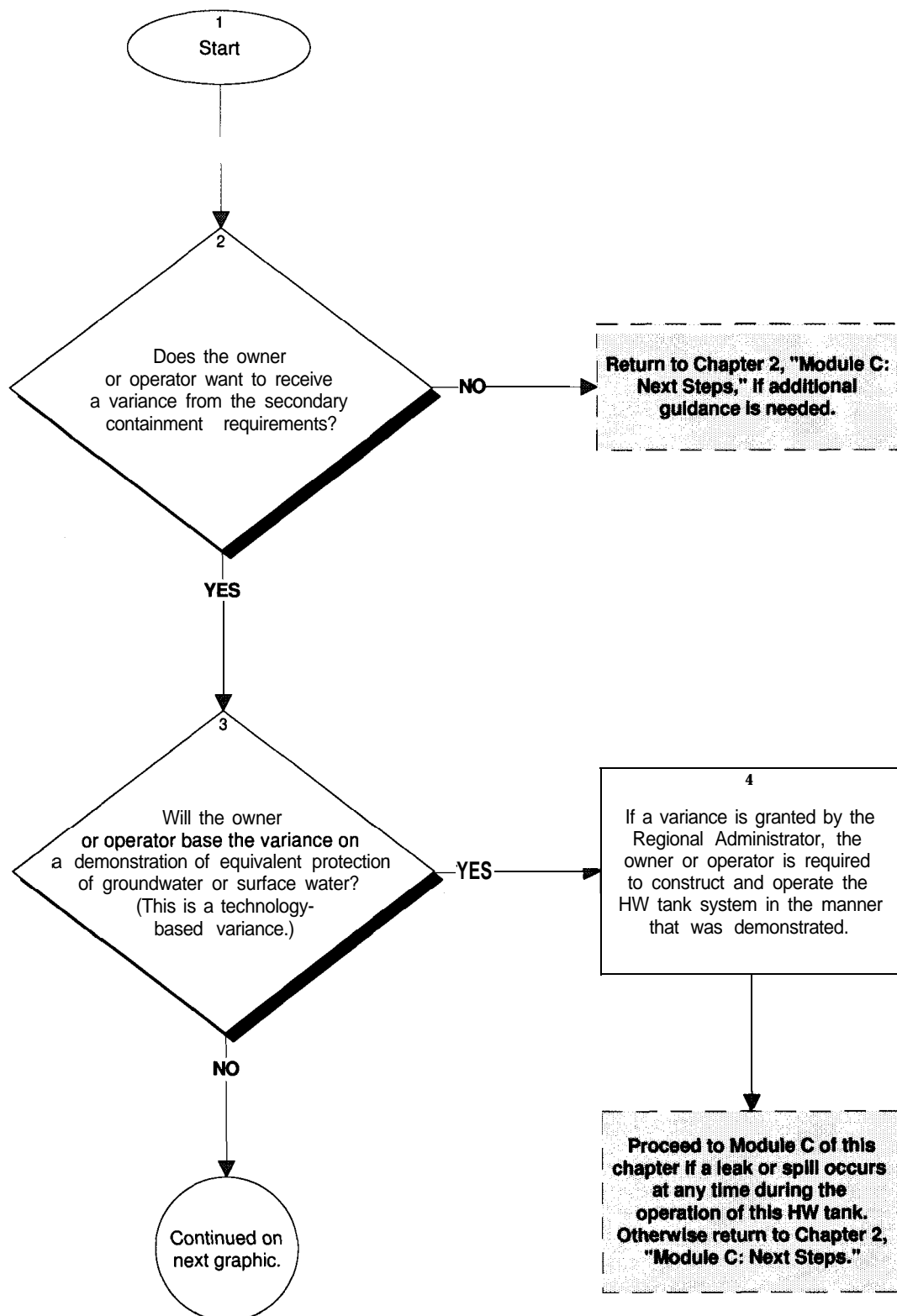
The following module describes the requirements for obtaining either a risk-based or technology-based variance.



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**Figure 7.2: Secondary Containment: Variance Requirements**



**Step 1** Start**Step 2** The owner or operator may obtain a variance from the secondary containment requirements if the Regional Administrator of the EPA finds:

- As a result of a demonstration by the owner or operator that the proposed alternative design and operating practices, together with location characteristics, will prevent the migration of any HW or hazardous constituents into the groundwater or surface water at least as effectively as secondary containment during the active life of the tank system; **or**
- That in the event of a release that does migrate to groundwater or surface water, no substantial present or potential hazard will be posed to human health or the environment.

The Regional Administrator must be notified of the variance request in writing according to the following schedule:

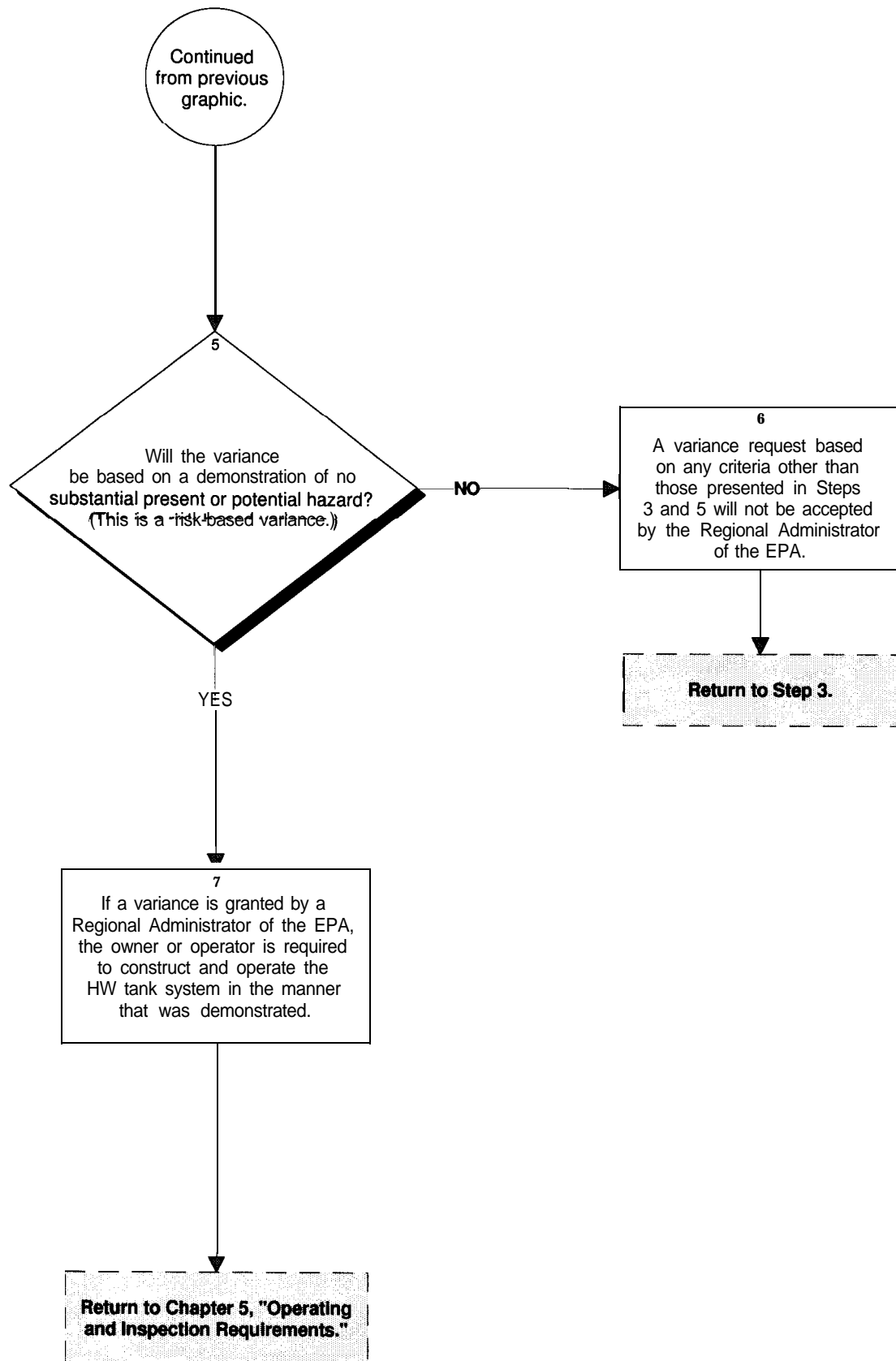
- For existing tank systems, at least **24 months prior** to the date that secondary containment must be provided in accordance with Chapter 7, "Module A: Secondary Containment Requirements," Step 13; and
- For new tank systems, at least **30 days prior** to entering into a contract for installation.

As part of the notification, the owner or operator must also submit a description of the steps and a timetable necessary to conduct one of the two demonstrations. The demonstration must be completed within 180 days after notifying the Regional Administrator of an intent to conduct the demonstration.

**Step 3** In deciding whether to grant a variance based on a demonstration of **equivalent protection of groundwater and/or surface water** (a technology-based variance), the Regional Administrator of the EPA will consider these four factors:

- The nature and quantity of the wastes;
- The proposed alternative design and operation;
- The hydrogeologic setting of the facility, including the thickness of soils present between the tank system and groundwater; and
- All other factors that would influence the quality and mobility of the hazardous constituents and the potential for them to migrate to groundwater or surface water.

**Step 4** Construction and/or operation in a manner other than what was demonstrated will remove the HW tank from compliance.



**Step 5** Note: New underground tank systems **may not** be exempted from the secondary containment requirements by a demonstration of no substantial present or potential hazard.

In deciding whether to grant a variance based on a demonstration of **no substantial present or potential hazard** (a risk-based variance), the Regional Administrator of the EPA will consider all of the following effects:

- The potential adverse effects on **groundwater, surface water, and land** quality taking into account:
  - The physical and chemical characteristics of the waste in the tank system, including its potential for migration;
  - The hydrogeological characteristics of the facility and surrounding land;
  - The potential for health risks caused by human exposure to waste constituents;
  - The potential for damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and
  - The persistence and permanence of the potential adverse effects;
- The potential adverse effects of a release on **groundwater** quality, taking into account:
  - The quantity and quality of groundwater and the direction of groundwater flow;
  - The proximity and withdrawal rates of groundwater users;
  - The current and future uses of area groundwater; and
  - The existing quality of groundwater, including other sources of contamination and their cumulative impact on the groundwater quality;
- The potential adverse effects of a release on **surface water** quality, taking into account:
  - The quantity and quality of surface water and the direction of surface water flow;
  - The patterns of rainfall in the region;
  - The proximity of the tank system to surface waters;
  - The current and future uses of surface waters in the area and any water quality standards established for those surface waters; and
  - The existing quality of surface water, including other sources of contamination and the cumulative impact on surface-water quality; and
- The potential adverse effects of a release on the **land** surrounding the tank system, taking into account the patterns of rainfall in the region, and the current and future uses of the surrounding land.

**Step 6** Step 3 contains the requirements for a technology-based variance; Step 5 contains the requirements for a risk-based variance.

**Step 7** Operation in a manner other than what was demonstrated will remove the HW tank from compliance.

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## 7.4 Module C: Responding to Releases From HW Tanks that have Received a Variance

### 7.4.1 Introduction

If a HW tank that has received a variance experiences a leak, it must be removed from service and repaired or replaced before being put back into service.

The regulations contained in 40 CFR 264/265.193(g)(3) specify requirements that must be followed by owners or operators of HW tanks that have received a technology-based variance.

Owners and operators of HW tanks that have received a risk-based variance must follow all of the applicable requirements found in 40 CFR 264/265.196. See Chapter 8, "Module A: Response to Leaks or Spills," and "Module B: Release Reporting."

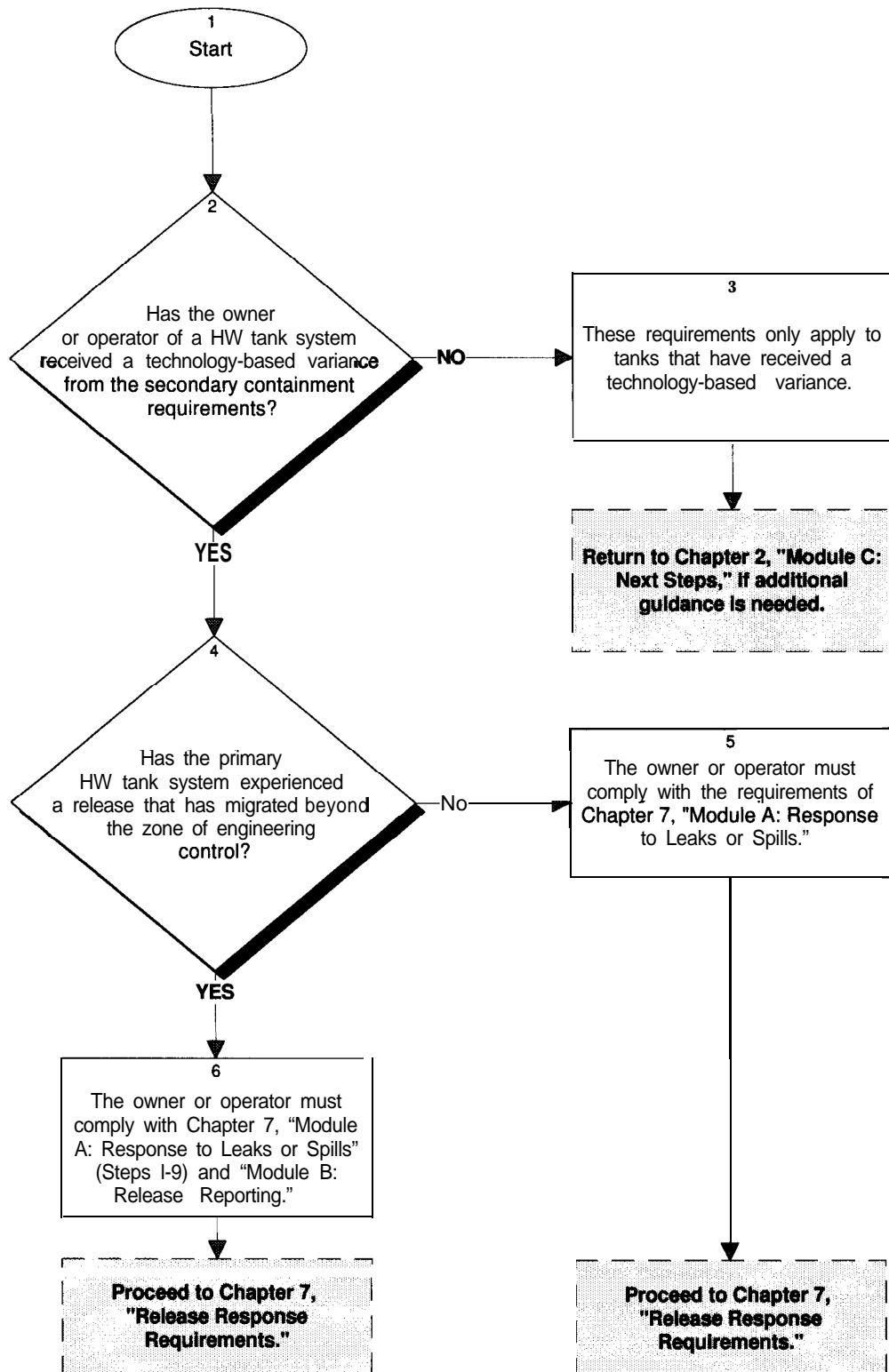
### 7.4.2 Milestones

***Has a release occurred from a HW tank for which a variance has been granted?***

- If the variance is **technology-based**, the owner or operator must determine whether or not the release has migrated beyond the zone of engineering control before formulating a response to the release; or
- If the variance is **risk-based**, the owner or operator does not have to make the same release-migration determination as described above. Instead, the owner or operator should proceed to Chapter 8, "Module A: Response to Leaks or Spills," before formulating a response to the release.

The following module identifies the requirements that must be met to properly respond to releases or spills from HW tanks that have received a technology-based variance from the secondary containment requirements.

**Figure 7.3: Responding to Releases from HW Tanks That Have Received a Variance**





- Step 1** Start
- Step 2** Return to Module B of this chapter to review the requirements for a technology-based variance.
- Step 3** HW tanks that have received a **risk-based variance** must comply with **all** of the release response requirements of 40 CFR 264/265.196. These requirements are presented in Chapter 8, Modules A and B.
- Step 4** The zone of engineering control is defined in the permit.
- Step 5** The owner or operator must meet all of the release response requirements of 40 CFR 264/265.196 except the notification requirements. Also, contaminated soil must be decontaminated or removed to the extent necessary to:
- Enable the tank system for which the variance was granted to resume operation with release detection capability at least equivalent to the capability it had prior to the release;
  - Prevent the migration of HW or hazardous constituents to groundwater or surface water; and
  - Comply with the requirement of 40 CFR 264/265.197(b) (Closure and Post-Closure Care) if contaminated soil cannot be removed or decontaminated. These requirements are found in Chapter 10, "Module B: HW Tanks Closing in the Same Manner as HW Landfills."
- Step 6** The owner or operator must comply with the release response requirements of 40 CFR 264/265.196(a), (b), (c), and (d). These requirements can be found in Chapter 8.
- The owner or operator must prevent the migration of HW or hazardous constituents to groundwater or surface water and decontaminate or remove contaminated soil. If contaminated soil cannot be decontaminated or removed or if groundwater has been contaminated, the owner or operator must comply with the closure requirements of 40 CFR 264/265.197(b) found in Module B of Chapter 10.
- Also, if repairing, replacing, or reinstalling the tank system, the owner or operator must provide secondary containment in accordance with the requirements found in this chapter's "Module A: Secondary Containment Requirements" or reapply for a variance from secondary containment. The requirements for new tank systems found in Chapter 4, "Module A: Design, Installation, and Assessment of New HW Tank Systems or Components," must be met if the tank system is replaced. The owner or operator must comply with these requirements even if contaminated soil can be decontaminated or removed and groundwater or surface water has not been contaminated.

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## **Chapter 8**

# **Release Response Requirements**

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## 8.1 Introduction

### 8.1.1 Background

Leaks or spills from HW tank systems can be caused by faults, corrosion, structural failure of the tank and ancillary equipment, errors in the initial installation, and operator error. Leaks can develop slowly, over time, as in the case of corrosion or structural failure. Spills, however, can occur rapidly, often due to operator error or to equipment failure.

After a leak or spill has been confirmed, the owner or operator must respond quickly to clean up the hazardous waste and any contaminated soil or debris, and to repair or replace the tank. The owner or operator must also notify the proper authorities and provide a written report of the incident.

### 8.1.2 Major Requirements

This chapter contains two modules: one details cleanup, repair, and/or replacement requirements; the other specifies applicable reporting requirements.

- **Module A: Response to Leaks or Spills.** This module provides cleanup, repair, and replacement requirements for HW tanks where a release has occurred. It also notes closure requirements found in Chapter 10 that may be necessary in some release-related circumstances.
- **Module B: Release Reporting.** This module describes the procedure for notifying the proper authorities in the event of a release of HW. Depending upon the severity of the event, notification must be made either to the National Response Center (NRC) or to the EPA Regional Administrator. In addition to EPA requirements, there are a number of DOE Orders that contain additional reporting requirements. These DOE Orders are listed in the introduction to Module B.

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## 8.2 Module A: Response to Leaks or Spills

### 8.2.1 Introduction

HW tanks from which a leak or spill has occurred must be removed from service immediately and the spill must be cleaned up as quickly as possible. The flow of HW must be contained to minimize the extent of the remediation that will be necessary as a result of the spill. The cleanup activities must be conducted in a manner that will safeguard the health of the employees involved and minimize the damage done to the local environment. Extreme care will be necessary in the presence of ignitable, reactive, or radioactive HW.

### 8.2.2 Milestones

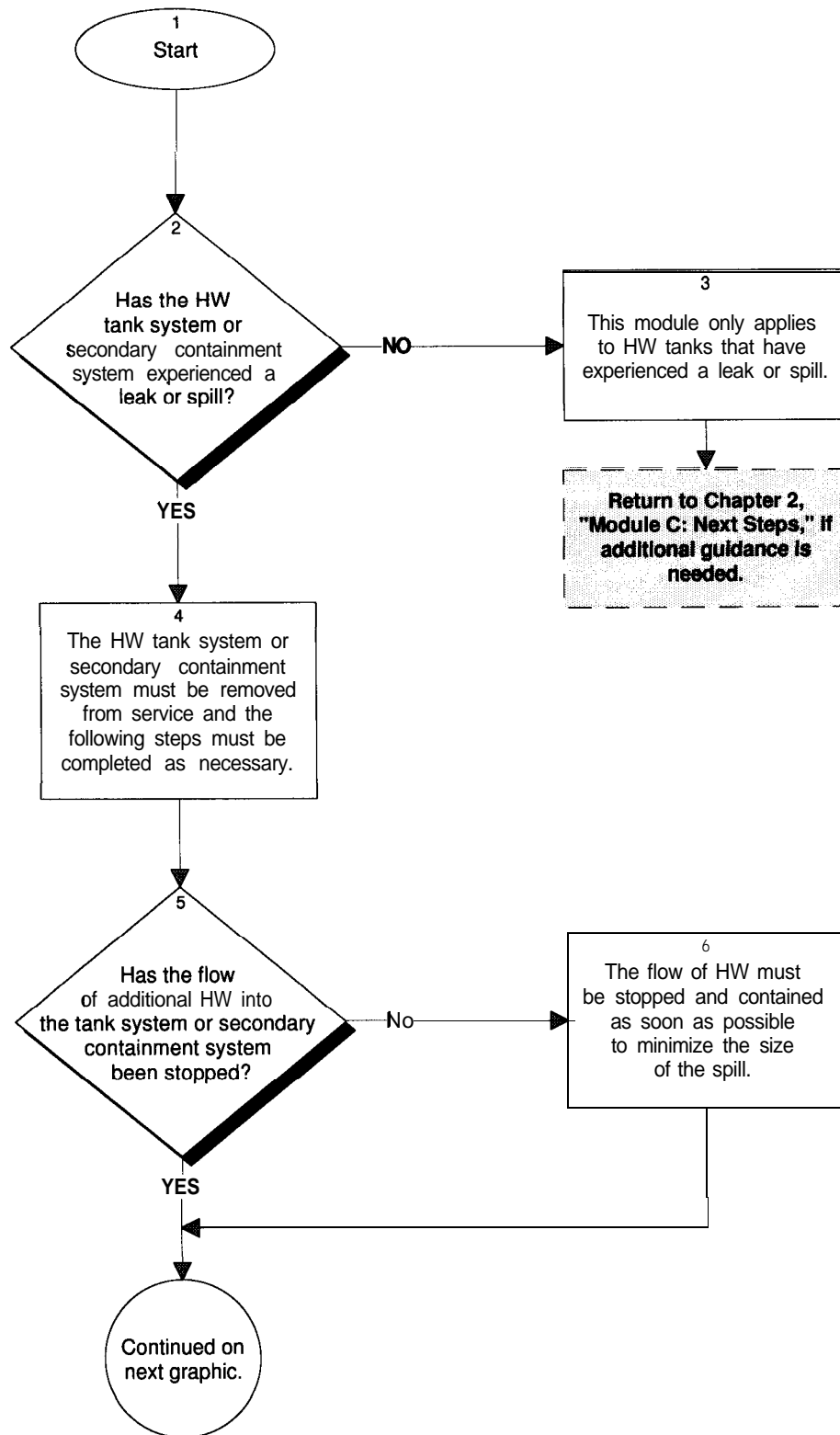
#### ***Has the response to a leak or spill been appropriate?***

After a leak or spill from a HW tank system has been confirmed, steps must be taken immediately to:

- Prevent the release of more waste to the environment;
- Inspect, repair, or replace the tank;
- Remediate affected soil, groundwater, and/or surface water as necessary; and
- Notify the appropriate authorities of the release.

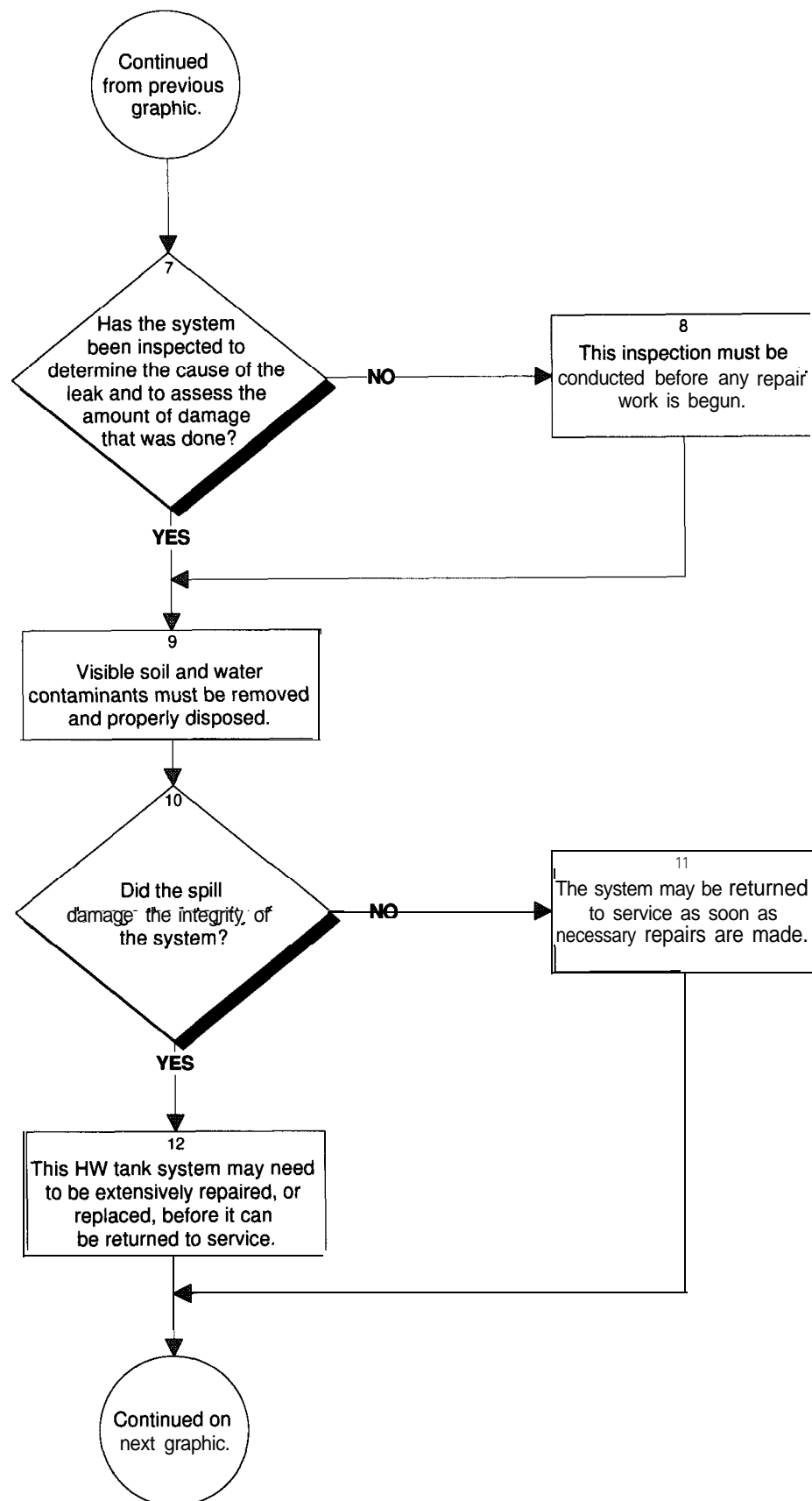
The following module provides the HW tank release requirements. Included in this module are HW tank repair and/or replacement requirements.

**Figure 8.1: Response to Leaks or Spills**



- Step 1** Start
- Step 2** EPA requires that the actions in this module be taken regardless of the size of the spill.
- Step 3** Until a leak or spill occurs, this module does not apply. However, DOE and DOE contractor employees are encouraged to periodically review this module as part of their emergency response readiness activities.
- Step 4** A tank system or secondary containment system from which there has been a leak or spill, or which is unfit for use, must be removed from service immediately.
- Step 5** The owner or operator must immediately stop the flow of HW into the tank system or into the secondary containment system and inspect the system to determine the cause of the release. The portion of the tank system that is leaking (if it can be easily located) should be isolated from the non-leaking parts of the system.
- Once the waste flow is stopped, disconnect and cap all open pipe ends, except for vent piping. [3]
- Step 6** Collection ditches, trenches, barrier curtains, plastic curtains, or booms may be used for HW flow containment. API Publication 1628, Underground Spill Cleanup Manual, contains a number of suggestions for trapping and recovering flowing liquids. [13]

Figure 8.1: Response to Leaks or Spills - continued





**Step 7** The owner/operator must immediately conduct a visual inspection of the release. Released HW may migrate to manholes, drain lines, basements, or other low areas. When remedying a visible release, the owner or operator should inspect surrounding streams, waterways, drainage channels, and wetlands. [3].

**Step 8** Based upon that inspection, the owner and operator must:

- Prevent further migration of the leak or spill to soils or surface water; and
- Remove, and properly dispose of, any visible contamination of the soil or surface water.

**Step 9** If the release was **from the tank system**, the owner/operator must remove as much of the waste as is necessary to prevent further release of HW to the environment and to allow inspection and repair of the tank system to be performed. This must be done within 24 hours after detection of the leak, or at the earliest practicable time if the owner/operator can demonstrate that more time is needed.

If the material released was **to a secondary containment system**, all released materials must be removed within 24 hours, or in as timely a manner as is possible, to prevent harm to human health and the environment.

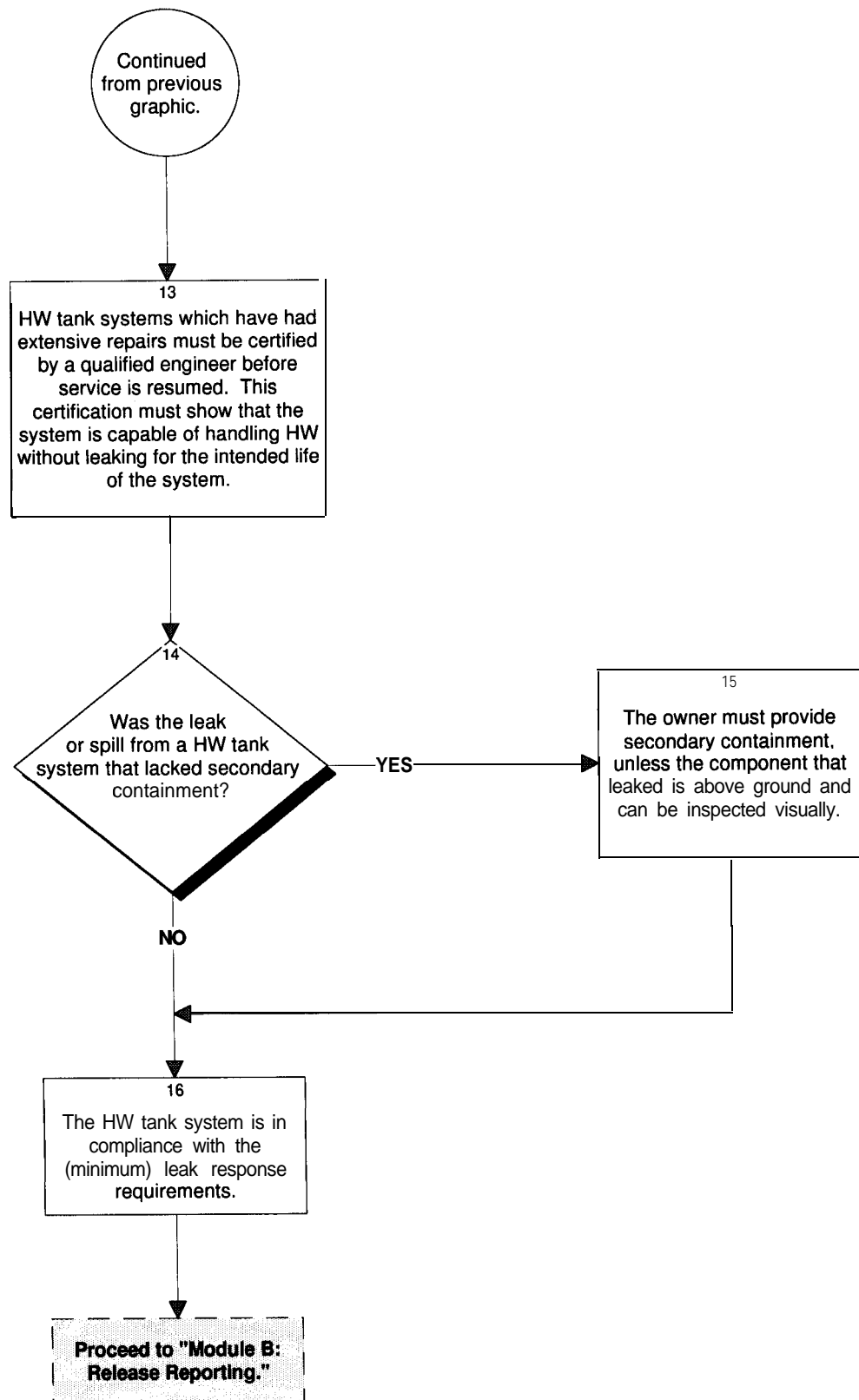
**Step 10** To determine if the spill or leak damaged the integrity of the HW tank system, consult Chapter 3, "Integrity Testing for Existing Tanks," for a complete description of the requirements for HW tank integrity testing.

**Step 11** If the cause of the release was a spill that **has not** damaged the integrity of the system, the owner/operator may return the system to service as soon as the released waste is removed and repairs, if necessary, are made.

If the cause of the release was a leak from the primary tank system into the secondary containment system, all necessary repairs must be made prior to returning the tank to service.

Guidelines to identify tanks that can be repaired by applying or installing an interior lining are contained in API Publication 1631, "Recommended Practice for the Interior Lining of Existing Steel Underground Storage Tanks." [14]

**Step 12** Examples of extensive repairs include repairing a ruptured tank, fixing torn secondary containment liners, or sealing concrete vaults.



**Step 13** If the tank system required extensive repair (e.g., installation of an internal liner, repair of a ruptured primary containment or secondary containment vessel), it must not be returned to service unless certification by an independent, qualified, registered professional engineer (as required in 40 CFR 270.11(d)) shows that the repaired system is capable of handling hazardous wastes, without release, for the intended life of the system. The owner/operator must submit this certification to the Regional Administrator of the EPA within seven days after returning the tank system to use.

**Step 14** If a release from a component of a tank system lacking secondary containment occurs, the owner/operator must provide that component with **secondary containment** that satisfies the requirements of Chapter 7 before it can be returned to service, unless the source of the leak is an aboveground portion of a tank system that can be inspected visually.

If the source is an aboveground component that can be inspected visually, the component must be **repaired** and may be returned to service without secondary containment as long as the requirements of Step 8 are satisfied.

If a component is **replaced**, that component must satisfy the requirements for new tank systems or components in 40 CFR 264/265.192 (Chapter 4) and 40 CFR 264/265.193 (Chapter 7).

If part of an underground tank system is to be **replaced**, several considerations are important. New steel connected to older steel corrodes faster. In the electrochemical activity of corrosion, a new surface is generally more active (anodic) than an older surface, which is generally coated with rust or scale from having been in soil for a long time. It is not uncommon for new steel to corrode and leak within a very short time while older steel portions of a tank system maintain their integrity. [3]

**Step 15** If a leak has occurred in any portion of a tank system component that is not readily accessible for visual inspection (e.g., the bottom of an onground tank), the entire component must be provided with secondary containment in accordance with 40 CFR 264/265.193 prior to being returned to use.

**Step 16** This HW tank is in compliance with the minimum HW tank release response, repair, and replacement requirements.

Note: Unless the owner/operator satisfies the requirements of Steps 11-15, the tank system must be **closed** in accordance with 40 CFR 264/265.197. See Chapter 10 for the requirements found in 40 CFR 264/265.197.

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## 8.3 Module B: Release Reporting

### 8.3.1 Introduction

Under RCRA notification of a release of HW is required when the quantity of HW released is greater than or equal to one pound. In addition, CERCLA and EPCRA require additional reporting if the HW released during a 24-hour period equals or exceeds its reportable quantity (RQ) as indicated in 40 CFR Part 302. Notification under these circumstances must be made to the National Response Center (NRC) and local authorities.

DOE personnel should consult this chapter when reporting a release of HW from a tank. DOE personnel should **also** consult the DOE Orders that govern DOE's internal reporting requirements. These Orders include (but may not be limited to):

- DOE Order 5500.1B, "Emergency Management System," May 30, 1991;
- DOE Order 5500.2B, "Emergency Categories, Classes, and Notification and Reporting System," April 30, 1991;
- DOE Order 5500.3A, "Planning and Preparedness for Operational Emergencies," April 30, 1991;
- DOE Order 5500.10, "Emergency Readiness Assurance Program," April 30, 1991; and
- DOE Order 5000.3B, "Occurrence Reporting and Processing of Operations Information," February 22, 1993.

### 8.3.2 Milestones

***Have all proper authorities been notified of the release of HW from a tank system?***

The owner or operator must determine the amount of HW released and:

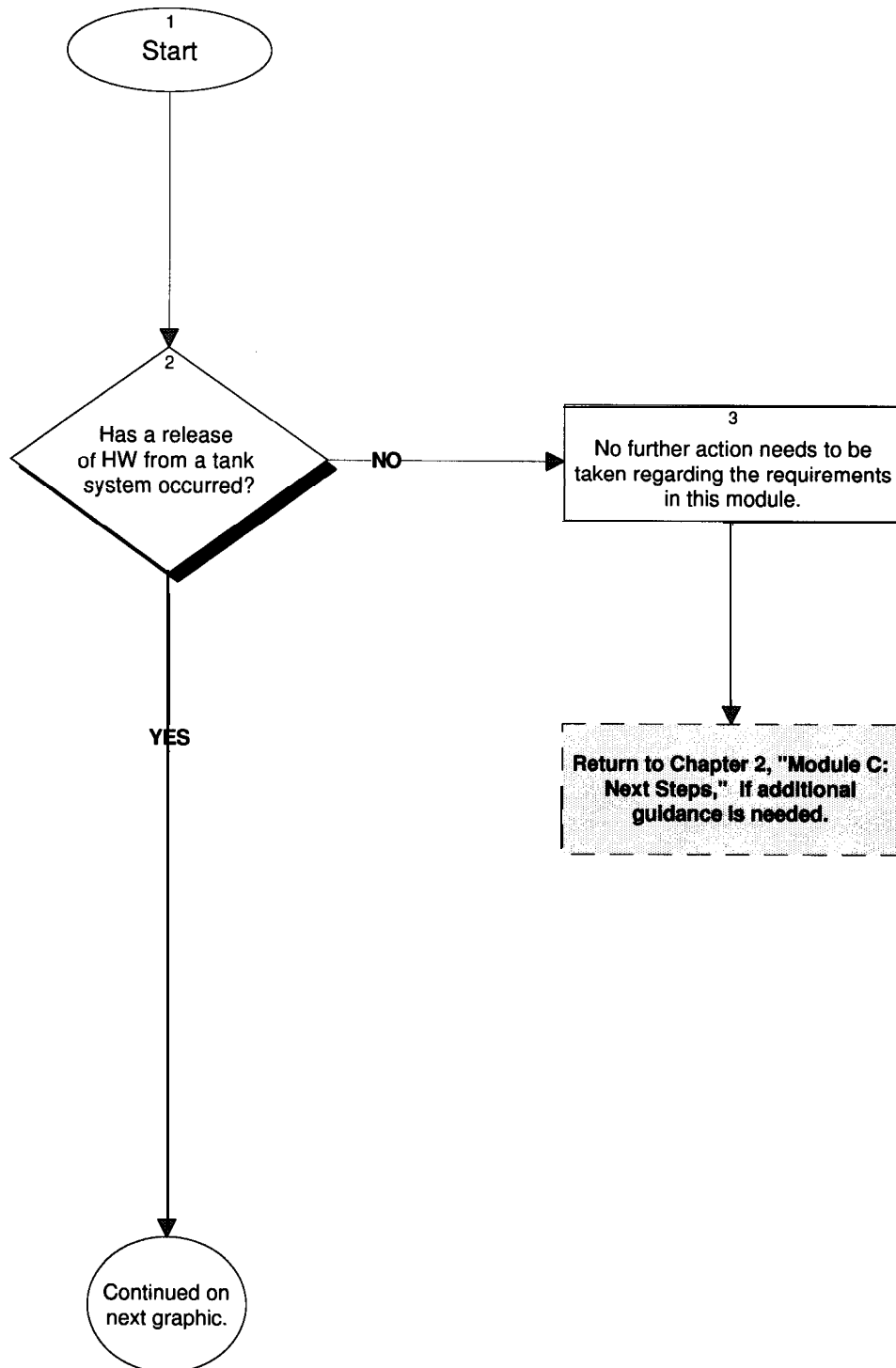
- If  $\geq$  one pound of HW is released, notify the NRC, the appropriate Regional Administrator of the EPA, etc. as necessary; or
- If the spill is less than one pound and immediately cleaned up, no notification is required.

The following module describes the minimum release reporting requirements.

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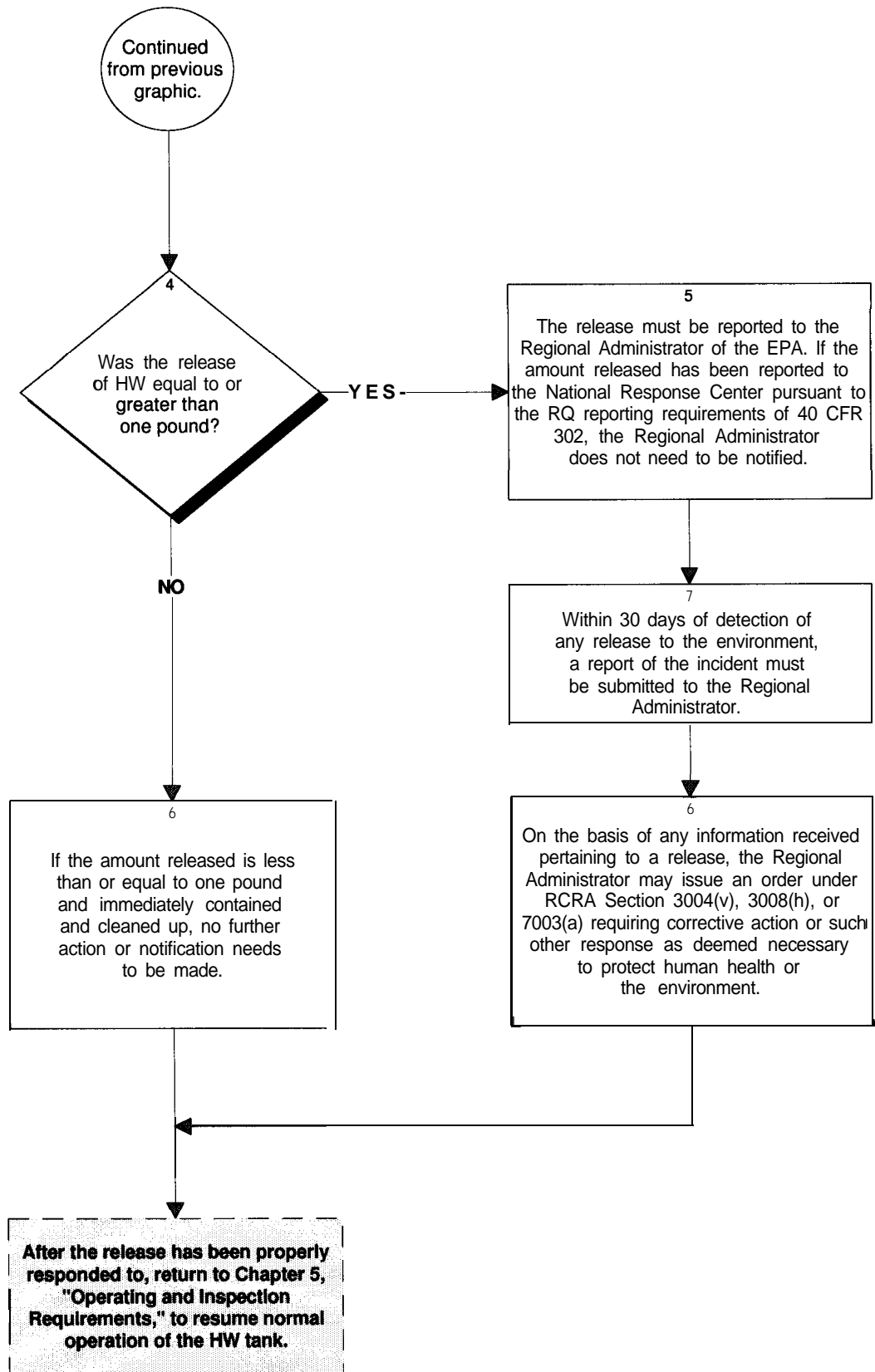
**Figure 8.2: Release Reporting**



**Step 1** Start**Step 2** Regardless of the size or location of the release, the response to the release must be immediate and in full compliance with the requirements of 40 CFR 264/265.196.

In addition to the RCRA reporting requirements described in this module, reporting is required under CERCLA and EPCRA. DOE/OEG has prepared an Information Brief "Reporting Releases of Hazardous Substances under CERCLA and EPCRA," which contains information about release reporting under CERCLA and EPCRA. In June of 1994, OEG also published "Hazardous Substance Release Reporting under CERCLA, EPCRA Section 304, and DOE Emergency Management System/Occurrence Reporting Requirements." For additional information, refer to DOE Publication "CERCLA Reporting Requirements, DOE Occurrence Reporting, and the DOE Emergency Management System." Furthermore, the Office of Environmental Policy and Assistance (OEPA) also has developed a HyperText-based, user-friendly computer program called the [RQ-CALCULATOR](#), to assist field personnel in determining if an RQ has been exceeded. [15], [16], [17], [21]

**Step 3** Until a release of HW occurs, reporting to the EPA or NRC is not required.





- Step 4** Releases of greater than one pound of HW must be reported pursuant to 40 CFR 264/265.196. However, it is important to note that RCRA requires reporting of releases that are **greater than** one pound, but CERCLA/EPCRA require reporting of releases that are **equal to or greater than** the RQ, which may be one pound. Most RQs, however, are greater than one pound.
- Step 5** Any release to the environment must be reported to the Regional Administrator within 24 hours of its detection. If the release has been reported pursuant to 40 CFR Part 302, that report will satisfy this requirement.
- A leak or spill of HW is **exempted** from these report requirements if it is:
- Less than a quantity of one pound; **and**
  - Immediately contained and cleaned up.
- Step 6** While there are no additional reporting requirements under 40 CFR 264/265.196, consult the appropriate DOE Orders and the guidance cited on Step 2 for any additional DOE internal reporting requirements.
- Step 7** Within **30 days** of detection of a release to the environment, a report containing the following information must be submitted to the Regional Administrator:
- The likely route of migration of the release;
  - Characteristics of the surrounding soil (geology, hydrogeology, climate);
  - Results of any monitoring or sampling conducted in connection with the release (if sampling or monitoring data relating to the release are not available within 30 days, these data must be submitted as soon as they become available);
  - Proximity to downgradient drinking water, surface water, and populated areas; and
  - Description of response actions taken or planned.
- Step 8** RCRA Section 3004(u) requires corrective action for all releases of hazardous waste or constituents from any solid waste management unit at a TSD facility seeking a permit under RCRA Subtitle C regardless of the time at which waste was placed in such unit. RCRA Section 3004(v) requires that treatment, storage, or disposal facilities undertake corrective action beyond the facility boundary, where necessary, to protect human health and the environment.
- Section 3008(h) of RCRA gives the Administrator of the EPA the authority to require corrective action at interim status facilities.
- Section 7003(a) of RCRA provides the authority for the Administrator of the EPA to bring suit on behalf of the United States against any person who has contributed to the handling, storage, treatment, or disposal of any solid or hazardous waste that is deemed to be causing an imminent and substantial endangerment to health or the environment.
- Also, if there has been a "routine and systematic" release, there would be a requirement (potentially) for corrective action. [12]

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